REMARKS

Claims 1-43 are pending, wherein claims 1, 15 and 23 have been amended.

The Office Action rejects claims 1-43 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,059,570 to Dragan et al.[1] in view of U.S. Patent No. 5,829,976 to Green. In response, Applicant has amended independent claims 1, 15 and 23 to more precisely define the specific structural and spatial relationships between the exit orifice in the distal delivery end, the body wall, the rim, the length "L", and the distance "D". Support for the new claim language is clearly shown in Figures 34A-34C and is further supported in the accompanying discussion in the written description at page 9, lines 1-24. The amendments to claims 1, 15 and 23 recite specific structural and spatial relationships that are believed to distinguish over the applied art.

As stated in the Office Action, Dragan et al. admittedly fails to disclose or suggest attaching fibers "a length 'L' distally beyond the rim of the hollow body" and "a distance 'D' proximally with respect to the rim", "wherein the distance 'D' is at least two and one half times greater than the length 'L'", as recited in the previously pending claims. As a result, the Office Action combines Green with Dragan et al. and states that "Green teaches a dental delivery tool wherein the distance is at least two and one half times greater than the length (figure 2)." Therefore, the only remaining issues are (1) whether one of ordinary skill in the art would have been motivated to combine Dragan et al. and Green and (2) even if combined, whether the combined references teach or suggest every limitation found in the claims.

To emphasize the specific structural and spatial relationships between the fibers that extend a length "L" beyond the rim and the fibers that are coupled a distance "D" along the wall, Applicant amended independent claims 1, 15 and 23 to more precisely define the location of the "rim" and its relationship to the "body wall". Since the "rim" forms a necessary endpoint for each of length "L" and distance "D", precisely defining its position and orientation relative to the body wall of the delivery device helps to more precisely define what is meant by the "length 'L'" and the "distance 'D'". Being able to accurately measure length "L" and distance "D" is a necessary precondition to determining the ratio of distance "D" to length "L".

[1] Because the earliest effective filing date of the current application is October 30, 2000, Dragan et al. is only citable under 35 U.S.C. §102(a). Accordingly, Applicant reserves the right to establish an invention date that is prior to the filing date of Dragan et al. in order to remove it as a reference.

The Office Action admits that Dragan et al. fails to teach or suggest the minimum ratio of distance "D" to length "L". To provide this missing teaching, the Office Action relies on Green, particularly Figure 2, for the proposition that "Green teaches a dental delivery tool wherein the distance is at least two and one half times greater than the length" (emphasis added). However, the critical questions when viewing Figure 2 of Green are "what distance" and "what length". The inability or failure to correctly measure distance "D" and length "L" would necessarily result in an inability or failure to correctly determine the ratio between distance "D" and length "L". It is necessary, when comparing Green to claims 1, 15 and 23 of the present application, for "the distance" and "the length" shown in Figure 2 of Green to be accurately measured (if they can be measured at all). Otherwise, it would be impossible to determine the ratio of "the distance" to "the length" shown in Figure 2 of Green. Arbitrarily assigning values to "the distance" and "the length" rather than measuring them according to the definitions recited in claims 1, 15 and 23 would clearly be improper. Unless one of ordinary skill, when viewing Figure 2, could have properly determined the relationship between distance "D" and length "L" to be greater than two and one-half times, Green would have provided no motivation to modify the delivery device of Dragan et al. to have a distance "D" that is at least two and one-half times the length "L".

As recited in claims 1, 15 and 23, the "length 'L'" is precisely defined as the length the fibers extend "distally beyond the rim of the hollow body" (emphasis added). The "distance 'D'" is precisely defined as the distance the fibers coupled along the body wall "proximally with respect to the rim" (emphasis added). Thus, the "rim" of the claimed delivery device forms an endpoint for both the length "L" and the distance "D". If there is no rim, there is no way to measure either distance "D" or length "L".

In order to determine whether one of ordinary skill in the art would have been motivated by Green to modify Dragan et al. so as to increase "the distance "D" to be at least two and one half times greater than the length "L", one must first identify the structure in Figure 2 of Green that corresponds to the "rim" limitation recited in claims 1, 15 and 23. As recited in these claims, the "rim surround[s] the exit orifice and [is] oriented laterally relative to the body wall". Thus, the "rim" is defined by its relationship to both the exit orifice and the body wall. Therefore, the first step is to find the structure in Figure 2 of Green that arguably corresponds to the "body wall" and "exit orifice" limitations. The structure in Green that most closely corresponds to the "body wall" is the outer wall of the "flexible probe 24", and the structure that

most closely corresponds to the "exit orifice" is "hole 26". Figure 2; col. 3, lines 26-27. The hole 26 of Green is located in the side of the flexible probe 24 which, unlike the delivery device in Dragan et al., has a closed, rounded end at the distal tip. The flexible probe 24 in Green is therefore shaped like a needle used to inflate a ball rather than a delivery device having an exit orifice at a distal delivery end. As a result, it is difficult, if not impossible, to identify any structure in Figure 2 of Green that corresponds to the "rim" limitation of claims 1, 15 and 23.

According to claims 1, 15 and 23, the "rim" is positioned so as to "surround[] the exit orifice" and be "oriented laterally relative to the body wall" (emphasis added). In Green, the outer wall of flexible probe 24, which is the structure that most closely corresponds to the claimed "body wall", forms a continuous hollow cylinder that is interrupted only by the hole 26 through the side of flexible probe 24. The portion of the outer wall of flexible probe 24 that immediately surrounds the hole 26 is therefore simply part of the otherwise continuous hollow cylinder. It is not "oriented laterally" relative to the remaining portion of the outer wall. Because claims 1, 15 and 23 require the "rim surrounding the exit orifice" to also be "oriented laterally relative to the body wall" (emphasis added), it follows that the portion of the outer wall of flexible probe 24 surrounding the "hole 26" in Green is not a "rim".

The only other part of the flexible probe 24 in Green that even arguably constitutes a "rim" is the distal end of the flexible probe 24. As shown in Figure 2, the distal end of the flexible probe 24 is "oriented laterally" relative to the remaining portion of the outer wall of the probe 24. However, because the distal end of the flexible probe 24 contains no opening, the distal end of the flexible probe 24 does not "surround[] the exit orifice" as required by claims 1, 15, 23. It therefore follows that the distal end of flexible probe 24 is also not a "rim".

In short, there is no structure anywhere in the device shown in Figure 2 of Green that corresponds to the "rim" limitation recited in claims 1, 15 and 23. Because of this, it is impossible to locate one of the end points for each of "distance 'D'" and "length 'L'" as defined in claims 1, 15 and 23. In the absence of this required end point, one of ordinary skill in the art cannot measure the "distance 'D'" and the "length 'L'". Without being able to measure "distance 'D'" and "length 'L'", one of ordinary skill is likewise unable to determine the ratio of "distance 'D'" to the "length 'L'". Any attempt to measure "the distance" and/or "the length" without first identifying the structure in Green that corresponds to the "rim" recited in claims 1, 15 and 23 will necessarily lead to inaccurate, if not wholly arbitrary, results. One cannot

arbitrarily pick a spot along the length of the flexible probe 24 in Green and assume it to be the "rim" without doing violence to the plain meaning of claims 1, 15 and 23.

In short, both "the distance" and "the length" of the fibers shown in Figure 2 of Green are indeterminate. That means the relationship (*i.e.*, relative magnitudes) between "the distance" and "the length" cannot be known. Therefore, Green provides no motivation to modify Dragan et al. to increase the distance "D" of the fibers so as to be at least two and one-half times the length "L". In view of this, the combination of Dragan et al. and Green neither teaches nor suggests every limitation found in claims 1, 15 and 23.

Moreover, one of skill in the art would not have been motivated to combine Dragan et al. and Green because the respective devices disclosed therein are (1) designed for different purposes and (2) have different and incompatible features required to carry out their respective intended purposes. Dragan et al. discloses a "container type applicator" that includes a "discharge nozzle through which a dental material is applied directly to a tooth". Col. 1, lines 4-5; col. 2, lines 17-18. The container type applicator of Dragan et al. is used to deliver "sealants, cements, bonding agents, flowable composites", and the like. Col. 3, lines 51-56. Fibers are bonded to the surface of the discharge nozzle which allows a flowable material to be "readily spread, painted or burnished onto the tooth as the flowable material is being expressed". Col. 2, lines 62-64; col. 3, lines 37-39. The fibers "function as a miniature brush by which the dentist may burnish or spread the dental material M onto a tooth". Col. 4, lines 10-14 (emphasis added). The fibers are described as being "minute fibers" that are attached by electrostatic flocking. Col. 4, lines 1-9. As such, they are soft and flexible to yield an applicator that is suitable as a "miniature brush". One of ordinary skill in the art would not expect the "miniature brush" containing the "minute fibers" of Dragan et al. to be suitable for scrubbing or debridement of teeth (*e.g.*, a brillo pad is suitable for scrubbing; a small paint brush is not).

In contrast to Dragan et al., Green discloses an interproximal dental scrubbing device for debridement that includes a "tufted surface which is capable of removing plaque". Col. 1, lines 12-15 and 57. The problem set forth in the background section of Green relates to the difficulty of removing plaque and calculus to prevent periodontal disease. The solution to this problem, according to Green, is an interproximal dental brush that includes a "flexible cannula cone which is completely covered with a nonwoven, tufted surface which is capable of removing plaque. The fibrous applicator tip is specifically designed to massage the interproximal root surfaces and

simultaneously deliver medication . . . in the gingival sulcus between the teeth". Col. 1, lines 55-62 (emphasis added). "The design of the tip for penetration and scrubbing as well as the delivery of medication makes the device highly effective in removing plaque and neutralizing endotoxins and collagenases found in the periodontal pocket. Col. 2, lines 21-24 (emphasis added).

The "tufted scrub material 18" shown in Figure 2 is a spongy material and may comprise "nylon, polyurethane foams or polyolefins". Col. 2, lines 56-58. Green specifically distinguishes the "tufted scrub material 18" from "brush bristles", such as may be contained on a brush for spreading, painting or burnishing as in Dragan et al., thereby leading one of skill in the art away from combining Green with Dragan et al., which specifically employs fibers or "brush bristles". "In contrast to brush bristles, several features of the scrub material 18 make it suitable for use in the invention". Col. 2, lines 63-64 (emphasis added). The purpose of using the tufted scrub material 18 shown in Figure 2 instead of "brush bristles" is so that "the scrub material 18 is rugged enough to scrub away plaque on the root surface of a tooth, dense enough to protect the cannula core, and soft enough to be non-irritating to gingival tissue, yet porous to allow medicament to flow through it". Col. 2, line 65 – col. 3, line 2 (emphasis added).

In view of such teachings, one of ordinary skill in the art would not have been motivated to combine Green with Dragan et al. since the latter, in violation of Green, uses "brush bristles". That is because the Dragan et al. applicator is not used for debridement, scrubbing, or plaque removal from between teeth, but to "spread", "paint" or "burnish" a composition onto a tooth. Because the Green and Dragan et al. devices are (1) designed for different purposes and (2) have different and incompatible features to carry out their respective features, they provide no teaching or suggestion that would have motivated one of ordinary skill in the art to modify Dragan et al. in the manner urged by the Examiner.

In general, when applying a reference, it is improper to pick and choose only so much of a reference as might support an examiner's position, while ignoring other portions that lead away from the claimed invention. MPEP § 2141.02 (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 489 U.S. 851 (1984)). Instead, the entirety of a reference must be considered. *Id.* When viewing Green and Dragan et al. in their entirety, one of ordinary skill in the art would not have been led to the invention recited in claims 1, 15 and 23.

Finally, Applicant notes that independent claim 43 appears to be patentable over the cited art without amendment. As discussed in the previous amendment, the Office Action did not reject claim 4 over Green or claim 10 over Dragan et al. Because claim 43 contains all the limitations of original claims 1, 4 and 10, it would appear to distinguish over Green and Dragan et al. Indeed, although the Office Action initially groups claim 43 together with claims 1-42 when first articulating the rejection over Dragan et al. and Green, no basis for rejecting claim 43 is set forth in the Office Action. Neither does the Office Action state any grounds for rejecting claim 10. As a result, claim 43 does not appear to stand rejected over the cited art. At the very least, the Office Action does not articulate any grounds for rejecting this claim. The same is true for claim 10.

As discussed in the previous amendment, claim 10 was not rejected over Dragan et al. Claim 10 was, however, erroneously rejected over Green. Claim 10 requires at least a portion of the hollow body to be rigid. While the first office action asserts that "at least a portion of the hollow body [in Green] is rigid" (page 3, ¶ 4), Applicant responds by noting that probe 24 is referred to as "flexible probe 24". To Applicant's understanding, the term "flexible" is the opposite of "rigid". No other portion of the delivery tip in Green is described as being "rigid". Accordingly, Applicant submits that claim 43 is patentable over the combination of Dragan et al. and Green.

In conclusion, Applicant believes the claims to be in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview or that may be overcome by Examiner amendment, the Examiner is requested to contact the undersigned attorney.

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